

## WHAT IS CLAIMED

1           1.     A base station of a mobile communication system comprising:  
2                     a transmitter that wirelessly transmits a pilot signal and a paging message  
3     to a mobile station of the mobile communication system; and  
4                     a controller that determines optimum paging channel power in accordance  
5     with pilot signal strength of the pilot signal wirelessly received by the mobile station,  
6                     said transmitter wirelessly transmitting the paging message to the mobile  
7     station over a paging channel at the optimum paging channel power.

1           2.     The base station of claim 1, wherein said controller determines optimum  
2     paging channel power in accordance with the pilot signal strength and forward loading of  
3     the base station,  
4                     the forward loading of the base station being a ratio of current transmitted  
5     power of the base station to maximum transmitted power of the base station .

1           3.     The base station of claim 1, wherein said controller also determines an  
2     optimum initial traffic channel power in accordance with the pilot signal strength.

1           4.     The base station of claim 1, wherein the mobile communication system is  
2     CDMA mobile communication system.

1           5.     A mobile switching center of a mobile communication system, the mobile  
2     switching center being supplied with indication of pilot signal strength of a pilot signal  
3     received wirelessly by a mobile station of the mobile communication system, the mobile  
4     switching center comprising:  
5                     a controller that determines optimum paging channel power for wireless  
6     transmission of a paging message to the mobile station in accordance with the pilot signal  
7     strength of the pilot signal.

1           6.     The mobile switching center of claim 5, wherein said controller supplies  
2     information indicative of the optimum paging channel power to a base station of the

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3 mobile communication system, the paging message being wirelessly transmitted from the  
4 base station to the mobile station at the optimum paging channel power.

1 7. The mobile switching center of claim 6, wherein said controller determines  
2 the optimum paging channel power in accordance with the pilot signal strength and  
3 forward loading of the base station,

4 the forward loading of the base station being a ratio of current transmitted  
5 power of the base station to maximum transmitted power of the base station.

1 8. The mobile switching center of claim 5, wherein said controller also  
2 determines an optimum initial traffic channel power in accordance with the pilot signal  
3 strength.

1 9. The mobile switching center of claim 5, wherein the mobile communication  
2 system is a CDMA mobile communication system.

1 10. A method of controlling transmission power of a base station of a mobile  
2 communication system comprising the steps of:

3 wirelessly transmitting a pilot signal to a mobile station of the mobile  
4 communication system;

5 determining optimum paging channel power in accordance with pilot signal  
6 strength of the pilot signal wirelessly received by the mobile station; and

7 wirelessly transmitting a paging message to the mobile station over a  
8 paging channel at the optimum paging channel power.

1 11. The method of controlling transmission power of claim 10, wherein said  
2 step of determining comprises determining optimum paging channel power in accordance  
3 with the pilot signal strength and forward loading of the base station,

4 the forward loading of the base station being a ratio of current transmitted  
5 power of the base station to maximum transmitted power of the base station.

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1           12. The method of controlling transmission power of claim 10, wherein the  
2 base station determines the optimum paging channel power.

1           13. The method of controlling transmission power of claim 10, wherein a  
2 mobile switching center of the mobile communication system determines the optimum  
3 paging channel power.

1           14. The method of controlling transmission power of claim 10, further  
2 comprising:

3                   determining optimum initial traffic channel power in accordance with the  
4 pilot signal strength; and

5                   wirelessly transmitting a call to the mobile station over a traffic channel at  
6 the optimum initial traffic channel power.

1           15. The method of controlling transmission power of claim 10, wherein the  
2 mobile communication system is a CDMA mobile communication system.

3           16. An article of manufacture taking the form of a computer-readable medium  
4 for controlling transmission power of a base station in a mobile communication system;  
5 the article of manufacture comprising:

6                   a pilot transmission source code segment for causing a computer within the  
7 base station to wirelessly transmit a pilot signal to a mobile station of the mobile  
8 communication system;

9                   a paging channel determination source code segment for causing the  
10 computer to determine an optimum paging channel power in accordance with pilot signal  
11 strength of the pilot signal wirelessly received by the mobile station; and

12                   a paging transmission source code segment for causing the computer to  
13 wirelessly transmit a paging message to the mobile station over a paging channel at the  
14 optimum paging channel power.

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1           17.    The article of manufacture of claim 16, wherein said paging channel  
2           determination source code segment causes the computer to determine the optimum paging  
3           channel power in accordance with the pilot signal strength and forward loading of the base  
4           station,

5                   the forward loading of the base station being a ratio of current transmitted  
6           power of the base station to maximum transmitted power of the base station.

1           18.    The article of manufacture of claim 16, further comprising:

2                   a traffic channel determination source code segment for causing the  
3           computer to determine an optimum initial traffic channel power in accordance with the  
4           pilot signal strength; and

5                   a traffic channel transmission source code segment for causing the  
6           computer to wirelessly transmit a call to the mobile station over a traffic channel at the  
7           optimum initial traffic channel power.

1           19.    The article of manufacture of claim 16, which controls transmission power  
2           of the base station in a CDMA mobile communication system.

1           ~~20.~~    An article of manufacture taking the form of a computer readable medium  
2           for controlling transmission power of a base station of a mobile communication system,  
3           the article of manufacture comprising:

4                   a paging channel determination source code segment for causing a  
5           computer of a mobile switching center of the mobile communication system to determine  
6           optimum paging channel power in accordance with pilot signal strength of a pilot signal  
7           wirelessly received by a mobile station of the mobile communication system; and

8                   a paging channel transmission source code segment for causing the  
9           computer to direct a base station to wirelessly transmit a paging message to the mobile  
10          station over a paging channel at the optimum paging channel power.

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1           21.    The article of manufacture of claim 20, wherein the paging channel  
2           determination source code segment causes the computer to determine the optimum paging  
3           channel power in accordance with the pilot signal strength and forwarding loading of the  
4           base station,

5                   the forward loading of the base station being a ratio of current transmitted  
6           power of the base station to maximum transmitted power of the base station.

1           22.    The article of manufacture of claim 20, further comprising:

2                   a traffic channel determination source code segment for causing the  
3           computer to determine optimum initial traffic channel power in accordance with the pilot  
4           signal strength of the pilot signal; and

5                   a traffic channel transmission source code segment for causing the  
6           computer to direct the base station to wirelessly transmit a call to the mobile station over a  
7           traffic channel at the optimum initial traffic channel power.

1           23.    The article of manufacture of claim 20, which controls transmission power  
2           in a CDMA mobile communication system.

1           24.    A propagated signal embodied in a carrier wave for controlling  
2           transmission power of a base station of a mobile communication system, the propagated  
3           signal comprising:

4                   a pilot transmission source code segment for causing a computer within the  
5           base station to wirelessly transmit a pilot signal to a mobile station of the mobile  
6           communication system;

7                   a paging channel determination source code segment for causing the  
8           computer to determine an optimum paging channel power in accordance with pilot signal  
9           strength of the pilot signal wirelessly received by the mobile station; and

10                  a paging transmission source code segment for causing the computer to  
11           wirelessly transmit a paging message to the mobile station over a paging channel at the  
12           optimum paging channel power.

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1           25.    The propagated signal of claim 24, wherein said paging channel  
2           determination source code segment causes the computer to determine the optimum paging  
3           channel power in accordance with the pilot signal strength and forward loading of the base  
4           station,

5                   the forward loading of the base station being a ratio of current transmitted  
6           power of the base station to maximum transmitted power of the base station.

1           26.    The propagated signal of claim 24, further comprising:

2                   a traffic channel determination source code segment for causing the  
3           computer to determine an optimum initial traffic channel power in accordance with the  
4           pilot signal strength; and

5                   a traffic channel transmission source code segment for causing the  
6           computer to wirelessly transmit a call to the mobile station over a traffic channel at the  
7           optimum initial traffic channel power.

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